

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO COMMERCIAL

Report Number: P584633

Luminaire Tested: **HC840D010-HM82555940-81RWWC**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584633
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-14)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 10/21/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC840D010-HM82555940-81RWWC
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4700.6 lumens
Efficiency: N/A
Efficacy: 114.6 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.08 / 1.17
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

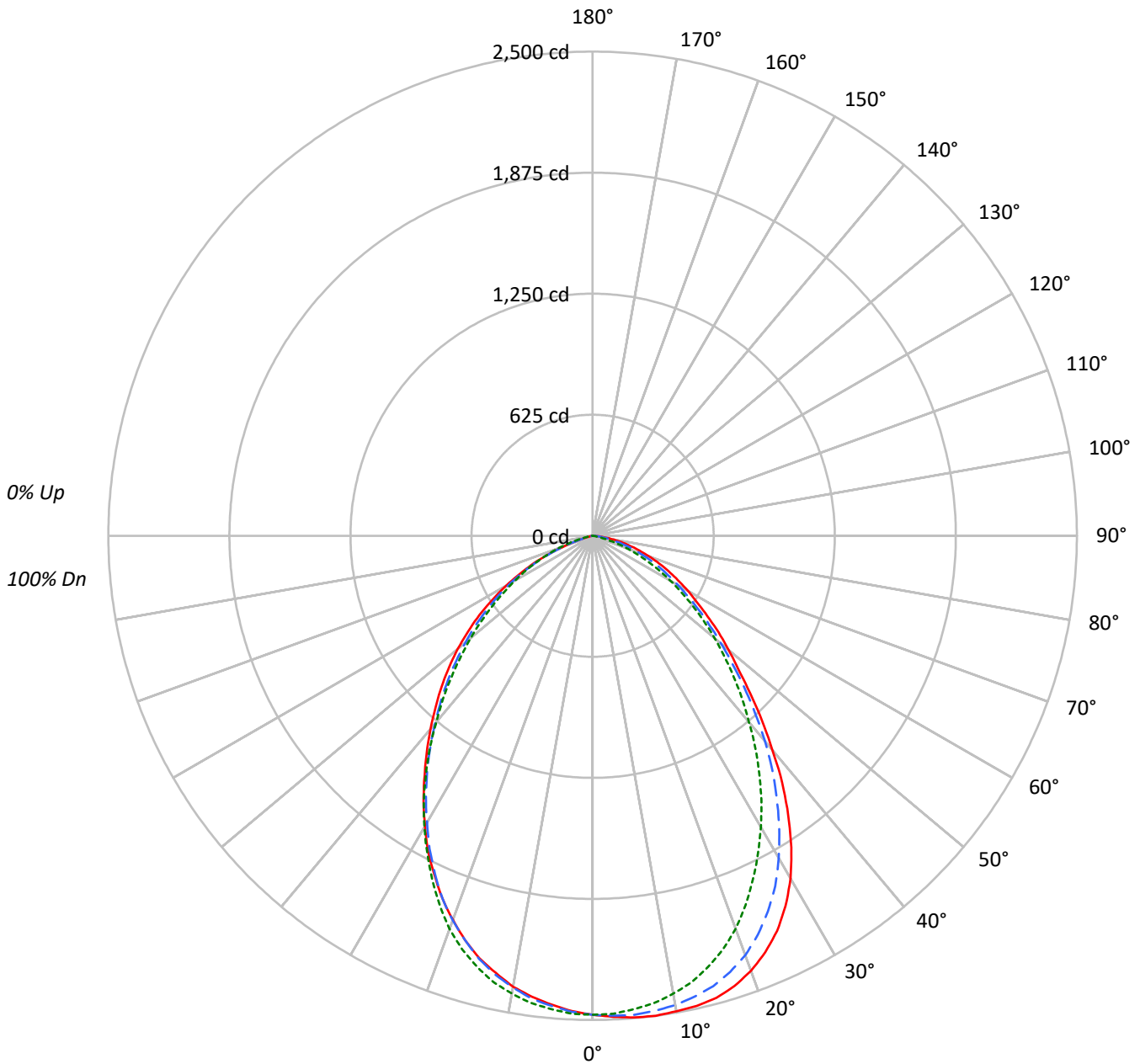
Input Watts (W): 41
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88								
2	103	96	90	85	100	94	89	84	91	86	82	87	84	81	85	82	79	77								
3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67								
4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59								
5	81	70	62	56	80	69	62	56	67	61	56	65	59	55	63	58	54	52								
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49	47								
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42								
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38								
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35								
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	76267	76267	76267
5°	77274	75943	75228
10°	78061	75168	74031
15°	78853	73579	72104
20°	78452	70868	69240
25°	76626	66623	65724
30°	72777	61845	61610
35°	66254	56436	56933
40°	58086	50507	52370
45°	50111	44930	48097
50°	43876	39443	43564
55°	38880	33907	38348
60°	35030	28511	31774
65°	31565	22889	24341
70°	27688	16670	13398
75°	23602	8650	3550
80°	18166	2344	586
85°	11676	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	233.3	5.0
10°-20°	656.0	14.0
20°-30°	931.1	19.8
30°-40°	980.1	20.9
40°-50°	833.8	17.7
50°-60°	602.5	12.8
60°-70°	342.7	7.3
70°-80°	108.0	2.3
80°-90°	13.1	0.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1820.4	38.7
0°-40°	2800.5	59.6
0°-60°	4236.8	90.1
0°-90°	4700.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4700.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2473	2473	2473	2473	2473	
5°	2496	2483	2453	2437	2430	238
15°	2470	2407	2305	2262	2259	696
25°	2252	2140	1958	1925	1932	1031
35°	1760	1658	1499	1489	1512	1095
45°	1149	1106	1030	1057	1103	893
55°	723	670	631	667	713	652
65°	433	373	314	310	334	429
75°	198	152	73	33	30	213
85°	33	20	0	0	0	43
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3
2.5°	2486.5	2489.7	2483.2	2483.2	2489.7	2483.2	2486.5	2486.5	2483.2	2483.2	2479.8
5°	2496.4	2493.0	2493.0	2493.0	2496.4	2489.7	2486.5	2489.7	2483.2	2483.2	2483.2
7.5°	2499.7	2499.7	2496.4	2493.0	2493.0	2493.0	2489.7	2486.5	2483.2	2476.5	2473.3
10°	2493.0	2493.0	2496.4	2489.7	2489.7	2483.2	2483.2	2476.5	2476.5	2470.0	2460.1
12.5°	2486.5	2483.2	2483.2	2476.5	2476.5	2470.0	2470.0	2460.1	2456.8	2446.9	2436.9
15°	2470.0	2466.6	2460.1	2456.8	2453.4	2450.1	2443.5	2440.2	2430.3	2417.1	2407.3
17.5°	2436.9	2433.7	2430.3	2423.7	2417.1	2413.8	2410.5	2400.6	2387.4	2377.5	2361.0
20°	2390.7	2387.4	2387.4	2377.5	2374.2	2364.3	2361.0	2347.8	2337.9	2318.0	2304.8
22.5°	2328.0	2331.2	2324.7	2318.0	2311.5	2301.6	2294.9	2281.7	2265.3	2245.4	2228.9
25°	2252.1	2255.3	2248.7	2242.1	2232.2	2225.7	2219.0	2199.2	2182.7	2159.6	2139.7
27.5°	2156.3	2156.3	2156.3	2149.6	2133.2	2129.9	2123.2	2103.4	2080.4	2060.5	2040.7
30°	2043.9	2040.7	2040.7	2030.7	2024.2	2011.0	2001.1	1984.6	1968.0	1944.9	1921.8
32.5°	1908.6	1911.9	1902.0	1895.4	1885.4	1885.4	1872.2	1859.0	1839.3	1816.2	1793.0
35°	1760.0	1763.3	1756.7	1753.3	1736.9	1733.6	1730.3	1713.7	1700.6	1684.1	1657.7
37.5°	1608.2	1604.8	1601.5	1601.5	1591.6	1585.0	1578.4	1568.5	1548.7	1535.5	1522.2
40°	1443.0	1443.0	1443.0	1439.7	1436.4	1429.8	1426.5	1419.9	1406.7	1393.5	1383.6
42.5°	1294.4	1294.4	1291.1	1287.8	1281.2	1284.5	1277.9	1271.3	1258.1	1248.2	1241.5
45°	1149.1	1149.1	1149.1	1152.4	1145.9	1136.0	1136.0	1129.3	1122.8	1116.1	1106.2
47.5°	1020.3	1030.3	1023.6	1020.3	1023.6	1010.4	1010.4	1003.9	997.2	990.7	977.5
50°	914.6	914.6	914.6	908.1	904.8	904.8	894.9	888.2	885.0	878.3	865.1
52.5°	819.0	812.3	812.3	809.0	805.7	799.1	799.1	792.5	779.3	772.7	762.8
55°	723.2	723.2	719.8	716.5	713.3	710.0	706.6	696.7	690.1	680.2	670.3
57.5°	637.2	643.9	640.6	634.0	627.4	627.4	620.8	614.2	604.3	594.4	584.4
60°	568.0	564.7	564.7	561.3	554.8	551.4	548.1	538.2	528.4	518.5	508.5
62.5°	495.3	495.3	495.3	488.7	482.1	478.9	475.5	468.9	455.7	445.8	439.2
65°	432.6	429.2	426.0	422.7	419.4	412.8	409.5	402.8	392.9	383.1	373.2
67.5°	369.9	366.5	366.5	363.2	353.3	350.0	350.0	340.1	330.2	320.3	310.4
70°	307.1	307.1	307.1	300.5	297.1	293.9	290.6	283.9	274.1	264.2	254.3
72.5°	254.3	251.0	251.0	247.6	237.8	234.4	231.1	224.6	214.7	208.0	201.5
75°	198.1	198.1	194.8	191.5	188.3	184.9	181.6	175.0	165.1	155.2	151.8
77.5°	151.8	148.6	148.6	145.3	138.6	135.4	135.4	128.8	118.9	112.2	105.7
80°	102.3	105.7	102.3	99.0	95.8	92.5	89.1	85.8	79.3	72.6	66.0
82.5°	62.7	66.0	62.7	62.7	59.4	56.2	56.2	49.5	46.2	43.0	39.6
85°	33.0	33.0	33.0	33.0	29.8	29.8	29.8	26.4	23.1	19.8	19.8
87.5°	9.9	13.2	9.9	9.9	9.9	9.9	9.9	9.9	6.5	6.5	6.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3
2.5°	2483.2	2479.8	2476.5	2476.5	2476.5	2476.5	2476.5	2473.3	2470.0	2470.0	2470.0
5°	2476.5	2476.5	2476.5	2473.3	2470.0	2470.0	2463.3	2460.1	2456.8	2453.4	2450.1
7.5°	2470.0	2463.3	2460.1	2456.8	2453.4	2453.4	2446.9	2440.2	2440.2	2433.7	2427.0
10°	2450.1	2446.9	2440.2	2433.7	2430.3	2427.0	2420.5	2410.5	2407.3	2400.6	2394.0
12.5°	2427.0	2420.5	2413.8	2400.6	2397.3	2394.0	2380.8	2370.8	2364.3	2361.0	2344.4
15°	2397.3	2384.0	2374.2	2357.6	2354.4	2347.8	2337.9	2328.0	2314.8	2304.8	2298.2
17.5°	2344.4	2331.2	2314.8	2298.2	2291.6	2291.6	2275.2	2262.0	2245.4	2238.9	2225.7
20°	2281.7	2265.3	2252.1	2232.2	2222.3	2212.4	2202.5	2182.7	2169.5	2159.6	2143.1
22.5°	2209.1	2186.0	2169.5	2149.6	2133.2	2123.2	2106.8	2090.2	2073.7	2063.8	2050.6
25°	2116.7	2096.8	2070.4	2050.6	2040.7	2027.5	2007.6	1991.1	1974.7	1958.1	1951.5
27.5°	2014.3	1987.9	1964.7	1941.6	1931.7	1921.8	1898.6	1878.9	1865.7	1849.1	1842.6
30°	1902.0	1875.6	1849.1	1829.4	1819.4	1803.0	1789.8	1766.6	1750.1	1736.9	1720.4
32.5°	1773.2	1753.3	1730.3	1700.6	1694.0	1680.8	1661.0	1651.0	1631.3	1621.4	1608.2
35°	1634.6	1621.4	1598.2	1575.1	1565.2	1558.5	1542.1	1522.2	1509.0	1499.2	1492.5
37.5°	1502.5	1486.0	1462.9	1446.3	1439.7	1429.8	1410.0	1400.0	1386.8	1380.3	1367.1
40°	1360.4	1344.0	1327.4	1317.6	1307.6	1301.0	1287.8	1277.9	1264.7	1254.7	1251.5
42.5°	1221.8	1211.9	1198.7	1185.5	1182.1	1172.3	1165.6	1155.7	1145.9	1142.5	1132.6
45°	1096.3	1086.4	1073.1	1059.9	1056.7	1050.1	1046.7	1036.8	1030.3	1030.3	1030.3
47.5°	970.8	960.9	947.7	941.1	944.4	931.2	931.2	927.8	921.3	921.3	924.6
50°	858.6	845.4	842.0	835.4	828.8	822.2	825.5	815.6	815.6	822.2	819.0
52.5°	752.9	739.7	736.4	729.7	726.5	726.5	723.2	723.2	719.8	723.2	723.2
55°	657.1	647.2	640.6	634.0	630.7	630.7	630.7	627.4	624.0	630.7	634.0
57.5°	571.2	568.0	561.3	551.4	548.1	544.9	541.6	541.6	541.6	541.6	544.9
60°	495.3	488.7	482.1	472.2	472.2	468.9	465.6	462.3	462.3	462.3	462.3
62.5°	429.2	419.4	409.5	402.8	399.6	396.3	392.9	386.4	386.4	386.4	386.4
65°	363.2	353.3	346.8	340.1	333.6	333.6	326.9	323.6	317.0	313.7	307.1
67.5°	300.5	293.9	287.3	277.4	274.1	270.7	264.2	260.8	251.0	247.6	244.3
70°	244.3	234.4	227.9	221.2	217.9	211.3	204.7	198.1	191.5	184.9	178.3
72.5°	191.5	181.6	175.0	168.4	161.8	161.8	151.8	145.3	135.4	128.8	118.9
75°	142.0	132.1	125.4	115.5	112.2	109.0	99.0	92.5	82.6	72.6	66.0
77.5°	95.8	89.1	82.6	72.6	66.0	66.0	56.2	49.5	43.0	33.0	29.8
80°	59.4	52.8	46.2	39.6	39.6	33.0	29.8	23.1	16.5	13.2	9.9
82.5°	33.0	29.8	26.4	19.8	19.8	16.5	13.2	9.9	6.5	3.3	3.3
85°	16.5	13.2	9.9	9.9	6.5	6.5	6.5	3.3	3.3	0.0	0.0
87.5°	6.5	3.3	3.3	3.3	3.3	3.3	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3
2.5°	2466.6	2466.6	2463.3	2463.3	2463.3	2460.1	2463.3	2460.1	2460.1	2460.1	2463.3
5°	2453.4	2446.9	2446.9	2443.5	2443.5	2440.2	2443.5	2440.2	2436.9	2433.7	2436.9
7.5°	2427.0	2420.5	2417.1	2413.8	2413.8	2413.8	2410.5	2407.3	2410.5	2400.6	2407.3
10°	2390.7	2387.4	2380.8	2377.5	2374.2	2377.5	2374.2	2367.6	2367.6	2367.6	2364.3
12.5°	2344.4	2337.9	2334.5	2331.2	2324.7	2324.7	2328.0	2321.3	2321.3	2314.8	2314.8
15°	2288.4	2281.7	2275.2	2275.2	2268.5	2268.5	2265.3	2265.3	2262.0	2258.6	2258.6
17.5°	2219.0	2209.1	2202.5	2205.8	2202.5	2199.2	2199.2	2192.6	2189.2	2192.6	2192.6
20°	2136.4	2129.9	2123.2	2126.5	2120.0	2116.7	2120.0	2110.0	2113.3	2113.3	2113.3
22.5°	2043.9	2040.7	2030.7	2030.7	2024.2	2020.9	2024.2	2024.2	2027.5	2024.2	2024.2
25°	1941.6	1935.1	1928.4	1928.4	1925.1	1921.8	1925.1	1928.4	1925.1	1928.4	1928.4
27.5°	1832.6	1822.7	1822.7	1816.2	1816.2	1819.4	1816.2	1819.4	1822.7	1822.7	1829.4
30°	1713.7	1710.5	1707.2	1703.8	1703.8	1707.2	1707.2	1707.2	1710.5	1717.1	1717.1
32.5°	1601.5	1595.0	1588.3	1588.3	1595.0	1591.6	1595.0	1595.0	1601.5	1601.5	1608.2
35°	1479.3	1479.3	1472.7	1476.1	1476.1	1476.1	1476.1	1482.6	1489.3	1492.5	1499.2
37.5°	1367.1	1357.2	1360.4	1360.4	1363.7	1360.4	1370.4	1370.4	1376.9	1376.9	1383.6
40°	1244.9	1244.9	1248.2	1244.9	1248.2	1248.2	1254.7	1261.4	1264.7	1271.3	1274.6
42.5°	1129.3	1136.0	1129.3	1132.6	1136.0	1139.2	1142.5	1145.9	1159.1	1165.6	1175.5
45°	1023.6	1027.0	1030.3	1033.5	1030.3	1036.8	1040.2	1046.7	1056.7	1059.9	1063.3
47.5°	921.3	924.6	927.8	931.2	931.2	937.8	941.1	947.7	954.3	957.6	960.9
50°	822.2	828.8	832.2	832.2	835.4	842.0	848.6	848.6	855.3	865.1	868.5
52.5°	733.0	733.0	739.7	742.9	746.2	746.2	756.1	759.5	762.8	769.3	776.0
55°	634.0	643.9	647.2	647.2	653.8	660.4	663.7	667.0	667.0	680.2	680.2
57.5°	548.1	551.4	558.1	558.1	558.1	568.0	568.0	574.5	577.9	581.2	587.7
60°	462.3	468.9	468.9	472.2	468.9	475.5	478.9	485.4	488.7	492.1	495.3
62.5°	383.1	383.1	386.4	386.4	386.4	386.4	392.9	392.9	399.6	402.8	406.1
65°	307.1	307.1	307.1	307.1	307.1	307.1	307.1	307.1	310.4	310.4	317.0
67.5°	237.8	234.4	227.9	231.1	227.9	227.9	224.6	224.6	227.9	227.9	234.4
70°	171.7	168.4	161.8	161.8	158.5	155.2	151.8	148.6	145.3	145.3	145.3
72.5°	112.2	105.7	95.8	92.5	92.5	85.8	79.3	75.9	75.9	75.9	75.9
75°	56.2	49.5	43.0	39.6	39.6	33.0	36.3	33.0	33.0	33.0	33.0
77.5°	23.1	16.5	13.2	13.2	13.2	9.9	9.9	9.9	9.9	9.9	9.9
80°	6.5	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
82.5°	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P584633

CATALOG NUMBER: HC840D010-HM82555940-81RWWC

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3
2.5°	2460.1	2460.1	2453.4	2456.8	2456.8	2456.8	2456.8	2456.8
5°	2430.3	2433.7	2430.3	2433.7	2433.7	2430.3	2430.3	2430.3
7.5°	2400.6	2403.9	2400.6	2403.9	2403.9	2403.9	2400.6	2400.6
10°	2364.3	2364.3	2364.3	2364.3	2364.3	2361.0	2364.3	2364.3
12.5°	2314.8	2314.8	2314.8	2318.0	2318.0	2314.8	2314.8	2311.5
15°	2262.0	2255.3	2258.6	2262.0	2258.6	2258.6	2258.6	2258.6
17.5°	2189.2	2192.6	2189.2	2189.2	2189.2	2189.2	2192.6	2189.2
20°	2113.3	2113.3	2116.7	2113.3	2113.3	2113.3	2113.3	2110.0
22.5°	2027.5	2024.2	2024.2	2027.5	2027.5	2024.2	2027.5	2027.5
25°	1931.7	1935.1	1931.7	1931.7	1935.1	1935.1	1935.1	1931.7
27.5°	1829.4	1832.6	1835.9	1832.6	1832.6	1832.6	1835.9	1839.3
30°	1723.7	1730.3	1723.7	1723.7	1730.3	1726.9	1730.3	1730.3
32.5°	1611.4	1621.4	1614.7	1621.4	1621.4	1624.6	1621.4	1624.6
35°	1499.2	1509.0	1509.0	1509.0	1512.4	1515.7	1515.7	1512.4
37.5°	1393.5	1396.8	1396.8	1403.4	1406.7	1410.0	1410.0	1406.7
40°	1284.5	1291.1	1294.4	1294.4	1294.4	1301.0	1307.6	1301.0
42.5°	1178.8	1182.1	1185.5	1185.5	1192.0	1195.4	1198.7	1198.7
45°	1076.5	1083.1	1086.4	1089.7	1093.0	1099.6	1096.3	1102.9
47.5°	970.8	980.7	984.0	987.3	993.9	997.2	1000.6	1003.9
50°	875.0	881.7	881.7	888.2	898.2	898.2	904.8	908.1
52.5°	779.3	782.5	785.9	789.2	795.8	802.4	802.4	809.0
55°	686.9	690.1	690.1	693.4	696.7	710.0	713.3	713.3
57.5°	591.1	591.1	597.6	600.9	604.3	610.8	610.8	610.8
60°	498.6	501.9	501.9	505.3	508.5	515.2	518.5	515.2
62.5°	406.1	409.5	409.5	412.8	419.4	422.7	419.4	419.4
65°	320.3	323.6	323.6	326.9	333.6	333.6	330.2	333.6
67.5°	234.4	234.4	234.4	234.4	234.4	234.4	234.4	234.4
70°	148.6	145.3	142.0	145.3	145.3	145.3	142.0	148.6
72.5°	72.6	75.9	75.9	75.9	75.9	75.9	75.9	72.6
75°	33.0	33.0	29.8	29.8	29.8	33.0	33.0	29.8
77.5°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
80°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)